

**We claim:**

1. A catalyst for the catalytic oxidation of hydrogen chloride, comprising on a support
  - a) from 0.001 to 30% by weight of gold,
  - b) from 0 to 3% by weight of one or more alkaline earth metals,
  - c) from 0 to 3% by weight of one or more alkali metals,
  - d) from 0 to 10% by weight of one or more rare earth metals,
  - e) from 0 to 10% by weight of one or more further metals selected from the group consisting of ruthenium, palladium, platinum, osmium, iridium, silver, copper and rhenium,in each case based on the total weight of the catalyst.
2. A catalyst as claimed in claim 1, wherein the support is selected from among silicon dioxide, graphite, titanium dioxide, zirconium dioxide and aluminum oxide.
3. A catalyst as claimed in claim 1 or 2, wherein gold is applied to the support as an aqueous solution of a gold compound.
4. A catalyst as claimed in any of claims 1 to 3, wherein gold is applied to the support as an aqueous solution of  $\text{AuCl}_3$  or  $\text{HAuCl}_4$ .
5. A catalyst as claimed in any of claims 1 to 4, wherein the metals other than gold are applied to the support as aqueous solutions of their chlorides, oxychlorides and oxides.
6. A process for the catalytic oxidation of hydrogen chloride to chlorine by means of oxygen over a catalyst as claimed in any of claims 1 to 5.
7. A process as claimed in claim 6, wherein the reaction temperature is  $\leq 300^\circ\text{C}$ .

RECEIVED  
MAR 28 2005  
PGWPTO